FIELD BEAN CULTIVAR NAMED ENOLA

FIELD OF THE INVENTION

This invention relates to a new field bean variety that produces distinctly yellow colored seed which remain relatively unchanged by season.

BACKGROUND OF THE INVENTION

Dry edible field beans (*Phaseolus vulgaris*) such as pintos, great northerns, navies, kidneys, blacks, pinks, etc., contain no cholesterol and very little fat. In combination with other foods, they serve as a complete source of protein. In fact, one cup of cooked dry field beans contains approximately 35% of the U.S. recommended daily allowance of protein.

Beans are also an important source of natural (dietary) fiber, which is a necessary part of the human diet. Dietary fiber is the undigestible part of the foods we eat. Beans possess more dietary fiber per serving than any other unprocessed food. For example, one-half cup of cooked beans contributes up to 6.78 grams of dietary fiber. Other foods high in dietary fiber include other legumes, bran, whole grain breads and cereals, fruits and vegetables.

There are two types of dietary fiber, insoluble and soluble. Insoluble fiber acts in the intestine to increase bulk and relieve constipation. Soluble fiber helps lower blood sugar and cholesterol levels. This means better control for people with diabetes or high blood cholesterol. One study found that by including beans in the daily diet, that blood cholesterol levels were reduced by 10 to 20%. Colorado Dry Bean Advisory Board. *Bean Recipes and Nutrition Facts,* Colorado Department of Agriculture (1988).

Beans are also a rich source of vitamins and minerals, including iron, potassium, calcium, zinc, magnesium, phosphorus and other trace minerals. They are also a rich natural source of B-complex vitamins.

As demonstrated above, field beans are an important and valuable field crop. Thus, a continuing goal of plant breeders is to discover and develop stable, high yielding bean cultivars that are agronomically sound. To accomplish this goal, the bean breeder must discover, select and develop bean plants that have the traits that result in superior cultivars.

SUMMARY OF THE INVENTION

The present invention involves a field bean cultivar named "Enola". The field bean cultivar Enola produces a distinct and completely yellow colored seed. The yellow color of the seed remains uniform and stable from season to season. The present invention also relates to a method for producing a field bean plant by crossing a first parent field bean plant with a second parent field bean plant, wherein the first and/or second field bean plant is the field bean plant of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The file of this patent contains at least one color photograph. Copies of this patent with the color photographs will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.

FIG. 1 shows a color photograph of several yellow colored bean seeds of the field bean cultivar Enola.

FIG. 2 shows a color photograph of a close-up of the seed of the variety Enola. The seed of Enola has a yellow color (matching most closely 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light) throughout its seed coat and a tan/yellow (matching most closely 2.5 Y 9/4 to 2.5 Y 9/6 in the *Munsell Book of Color* when viewed in natural light) hilar ring.

FIG. 3 shows a color photograph of the dry field bean cultivar Enola, including its stem, branches, leaves, pods and root structure.

DEFINITIONS

In the description and tables which follow, a number of terms are used. In order to provide a clear and consistent understanding of the specification and claims, including the scope to be given such terms, the following definitions are provided:

Maturity. Plants are considered mature when 95% of the pods have received their mature color.

Plant Height. Plant height is taken from the top of soil to the top of the plant and is measured in centimeters.

Munsell Book of Color. Munsell Book of Color refers to the *Munsell Book of Color,* Neighboring Hues Edition, Matte Finish Collection, 1973 (Call Number ND 1285.M83 1973), herein incorporated by reference. The *Munsell Book of Color* contains the system of color notation developed by A. H. Munsell that identifies color in terms of three attributes: hue, value and chroma. The three attributes of color are arranged into orderly scales of equal visual steps; the scales are used as dimensions or parameters for the accurate specification and description of color under standard conditions of illumination and viewing in natural lighting.

The hue (H) notation of a color indicates its relation to a visually equally-spaced scale of 100 hues. There are ten major hues (five principal and five intermediate) positioned ten hue steps apart within this scale. The hue notation in general use is based on the ten major hue names, Red, Yellow-Red, Yellow, Green-yellow, Green, Blue-Green, Blue, Purple-Blue, Purple and Red-Purple.

The value (V) notation indicates the lightness or darkness of a color in relation to a neutral gray scale, which extends from absolute black to absolute white. The value symbol 0 is used for absolute black, the symbol 10 is used for absolute white. The symbol 5 is used for the middle gray and for all chromatic colors that appear half way in value between absolute black and absolute white.

The chroma (C) notation indicates the degree of departure of a given hue from a neutral gray of the same value. The scales of chroma extend from 0 for a neutral gray out to 10, 12, 14 or farther, depending upon the strength (saturation) of the sample to e evaluated.

The complete Munsell notation for a chromatic color is written H V/C. For example, seed having the Munsell color 7.5 Y 8.5/6. The 7.5 Y represents the hue, 8.5 represents the value, and 6 is the chroma.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a field bean (*Phaseolus vulgaris*) cultivar that produces seed having a distinctive yellow color. The yellow color is present throughout the entire seed coat and remains uniform and stable season after season, when viewed in natural lighting.

In 1994, field beans that were yellow in color were discovered in a package of dry edible beans purchased in Mexico and brought to the United States. This package of beans contained a variety of different types of beans including browns, blacks, pintos, etc. Later in 1994, the yellow

field beans selected from the package of miscellaneous beans were planted in Montrose County, Colorado and allowed to self-pollinate. A segregating population of plants resulted. Many of the resulting plants exhibited abnormally large leaves, approximately twice the size of the leaves of the cultivar of the present invention, and produced pods containing yellow seeds. Additionally, a large number of the plants also produced pods that did not adhere well to the branches of the plant and fell to the ground and other pods exhibited shattering prior to harvest. Individual plants exhibiting small leaves, good adherence of the pod to the branches of the plant, as well as resistance to pod shattering, were selected and harvested individually.

The harvested seeds were planted in 1995 in Montrose County, Colorado and allowed to self-pollinate. Most of the resulting plants exhibited uniform leaf size. Individual plants exhibiting good adherence of the pod to the branches of the plant, resistance to pod shattering and yields greater than the average yield of an average commercial bean plant (the average commercial pinto bean plant yields approximately 3.1 pinto beans per pod) were selected and harvested individually.

These harvested seeds were planted in 1996 in Montrose County, Colorado and allowed to self-pollinate. The resulting plants exhibited uniform leaf size. Individual plants exhibiting the good adherence of the pod to the plant, higher yield, and resistance to pod shattering were selected and harvested and bulked to produce the cultivar of the present invention.

The field bean cultivar Enola exhibits superior characteristics over other classes of field bean cultivars. More specifically, Enola seed possesses a unique yellow color, matching most closely to 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color,* when viewed in natural light. Unlike the seed produced by the "Yellow Eye" class of dry field beans, such as the cultivar Steuben, in which the yellow color is restricted only to the "eye" of the seed, the yellow color of the Enola seed is present throughout the entire seed coat. The hilar ring of Enola is tan/yellow in color, matching most closely 2.5 Y 9/4 to 2.5 Y 9/6 in the *Munsell Book of Color,* when viewed in natural light. FIG. 1 is a color photograph of the yellow bean seeds of Enola. This photograph demonstrates that the entire seed coat of the bean is yellow in color. FIG. 2 is a close-up color photograph of the yellow seed of Enola. This photograph demonstrates that the entire seed coat of Enola seed, including the hilar ring, is yellow in color. The yellow color of the Enola seed remains relatively unchanged by season. "Relatively unchanged by season" means that the color of the seed remains uniform and stable from season to season.

FIG. 3 shows a color photograph of the field bean cultivar Enola. The photograph shows the wood-like stalk of the cultivar and its wrinkled and dull ovate shaped leaves. The photograph also demonstrates the long, branching root structure of the plant, which is unusual for a field bean cultivar. The root structure of most field bean cultivars (such as pintos) would be described as follows. Beginning at, or just below the soil line, the root averages 0.5 cm±in caliper size and branches into a mass of roots consisting of a main taproot, leader or stabilizing roots, and feeder roots, all of soft plant tissue extending up into the stem and branches of the plant. The main taproot is generally of the same size or slightly larger than the leader and feeder roots. Since the root system is not heavy in mass and does not extend very deep into the soil, these beans are "pulled" at harvest time. The yellow "Enola" variety establishes a long deep-growing taproot averaging 1.0 cm±in caliper size, a leader root of slightly lesser size, and even smaller feeder roots, all of the same wood-like tissue that extends upward into the stem. Due to the size and wood-like tissue structure, the Enola bean must be cut or "knifed" at harvest time.

The pods produced by the cultivar Enola adhere strongly to the branches of the plant. There is minimal dropping of the pods from the branches, under normal or adverse climatic conditions which is a significant problem in other field bean varieties. Additionally, the pods of Enola exhibit good tightness, which is helpful in keeping out moisture, which lessens seed damage, thereby improving the quality of the seed. Seed damage due to moisture has been a problem in other field bean varieties. Typically, once moisture gets into the pods of a bean plant, the pods swell, then shrink, and then eventually open, releasing their seeds into the growing area. Finally, the pods of Enola exhibit very little shattering prior to harvest.

The distinctly yellow colored bean seeds of Enola are edible for human consumption. Unlike other dry field beans which have a gritty type of texture and taste, the bean seeds of Enola have a smooth texture and taste. Additionally, the bean seeds of Enola have the ability to take on a large volume of water when soaked prior to cooking. Furthermore, the bean seeds of Enola have been found to cook up faster, in approximately one-half the time, of other dry field beans. For example, two pots containing the yellow bean seeds of the present invention can be cooked in the same amount of time that it takes to cook just one pot of pinto bean seeds.

The cultivar has shown uniformity and stability for all traits, as described in the Example 1, which contains a description of variety information. The cultivar has been self-pollinated a sufficient number of generations, with careful attention to uniformity of plant type to ensure phenotypic stability. The cultivar has been increased with continued observation for uniformity. No variant traits have been observed or are expected in Enola.

This invention is also directed to methods for producing a field bean plant by crossing a first parent field bean plant with a second parent field bean plant, wherein the first or second field bean plant is the field bean plant Enola. Further, both first and second parent field bean plants may be from the cultivar Enola. Therefore, any method using the cultivar Enola is part of this invention: selfing, backcrosses, hybrid breeding, and crosses to populations.

As used herein, the term "plant" includes plant cells, plant protoplasts, plant cells of tissue culture from which field bean plants can be regenerated, plant calli, plant clumps, and plant cells that are intact in plants or parts of plants, such as pollen, flowers, seeds, pods, leaves, stems, and the like. Thus, another aspect of this invention is to provide for cells which upon growth and differentiation produce the cultivar Enola.

By way of example, not of limitation, the following examples are given.

EXAMPLE 1

Morphological Description of Enola

The field bean cultivar Enola will not be described. The terminology used herein to describe Enola are those used by the Plant Variety Protection Office, unless otherwise noted, in Exhibit C, "Objective Description of the Variety Edible Bean (*Phaseolus vulgaris* L.).

1. PLANT VARIETY. Enola is a dry field bean variety. Genus and Species Name: *Phaseolis vulgaris*. Family name: Leguminosae.

2. PLANT HABIT. Enola is in the form of bush—determinate, with a strong and erect stem and branches. The average height of the mature plant is 34.9 cm. The position of the pod on the plant is scattered. The variety exhibits good lodging resistance through maturity, and does not fall over easily when subjected to wind and other climatic conditions. The variety is not adapted for machine harvesting.

3. LEAF MORPHOLOGY. The mature leaves are wrinkled and dull and the overall shape of the leaves is ovate. The apex of the leaves are acuminate and the base is obtuse.

4. FLOWER COLOR. The color of the flowers, wings and keel is white.

5. POD MORPHOLOGY.

ONSET—At onset, the color of the pod is green (matching most closely 5 GY 6/6 in the *Munsell Book of Color* when viewed in natural light) and the color pattern of the pod is solid. The pod exhibits a pear shape cross section. The curvature of the pod is straight and the orientation of the pod beak is also straight. The pod exhibits slight constrictions.

MATURITY—At maturity, the color of the pod is tan (matching most closely 5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light) and the color pattern of the pod is solid. The pod exhibits a pear shape cross section. The curvature of the pod is slightly curved and the orientation of the pod break is variable. The average break length of the pod is 1.2 cm. The pod also exhibits slight constrictions. The number of seeds per pod is approximately 3.1.

6. SEED COLOR. The seeds are shiny and monochrome. The primary color of the seeds is yellow (matching most closely 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light). The seeds do not have a secondary color. The color of the hilar ring is tan/yellow (matching most closely 2.5 Y 9/4 to 2.5 Y 9/6 in the *Munsell Book of Color* when viewed in natural light). Light is not required for the germination of the seeds.

7. SEED SHAPE AND WEIGHT. The shape of the seed taken from the middle of the pod is cuboid. The dry seed weight of 43 grams per 100 seeds (adjusted to 12 percent moisture).

8. ANTHOCYANIN PIGMENTATION. Anthocyanin pigmentation is absent in the flowers, stems, pods, seeds, leaves, petioles, peduncles and nodes.

9. DISEASE AND STRESS REACTIONS. Enola is tolerant to heat. Enola exhibits some resistance to Fusarium root rot.

10. MISCELLANEOUS INFORMATION. The estimated maturity is late (101 days).

EXAMPLE 2

Propagation of Enola

Production of market ready beans from Enola proceeds as follows. Seed is directly sown one at a time in rows in a bed. The rows on a bed are about 30 inches apart with seed deposited at intervals of approximately 1½ to 1¾ inches along the row.

In Montrose County, Colorado, the plants are watered during the germination phase using a gravity flow system. As the plants grow, they require water approximately every 7 to 10 days.

In mineral soils common in the west, fertilization with nitrogen, phosphorus and, less frequently, potassium is required.

Harvest time various according to the local climatic conditions. Enola takes approximately 100 to 105 days from planting to harvest in Colorado.

At maturity, the plants are knifed and put into a windrow and allowed to dry. Drying takes approximately 5 to 8 days. Once dried, the plants are combined using a conventional combine.

Deposit of Enola

Seeds of Enola have been deposited with the American Type Culture Collection, 12301 Parklawn Drive, Rockville, Md. 20852. The deposit was made on Dec. 11, 1997 and received accession number ATCC 209549. This deposit was made in compliance with the Budapest Treat requirements that the duration of the deposit should be for thirty (30) years from the date of deposit or for five (5) years after the last request for the deposit at the depository or for the enforceable life of a U.S. Patent that matures from this application, whichever is longer. Seeds of Enola will be replenished should it become non-viable at the depository.

Although the foregoing invention has been described in some detail by way of illustration and example for purposes of clarity and understanding, it will be obvious that certain changes and modifications may be practiced within the scope of the invention, as limited only by the scope of the appended claims.

What is claimed is:

1. A *Phaseolus vulgaris* field bean seed designated Enola as deposited with the American Type Culture Collection under accession number 209549.

2. A field bean plant produced by growing the seed of claim **1**.

3. Pollen of the plant of claim **2**.

4. A field bean plant having all the physiological and morphological characteristics of the field bean plant of claim **2**.

5. A method of producing a field bean plant comprising crossing a first parent field bean plant with a second parent field bean plant, wherein the first field bean plant is the field bean plant of claim **2**.

6. A method of producing a field bean plant comprising crossing a first parent field bean plant with a second parent field bean plant, wherein the second field bean plant is the field bean plant of claim **2**.

7. A method of producing a field bean plant comprising crossing a first parent field bean plant with a second parent field bean plant, wherein the first and second field bean plant is the field bean plant of claim **2**.

8. A field bean variety of *Phaseolus vulgaris* that produces seed having a seed coat that is yellow in color, wherein the yellow color is from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light.

9. The *Phaseolus vulgaris* of claim **8** wherein the seed further comprises a hilar ring.

10. The *Phaseolus vulgaris* of claim **9** wherein the hilar ring has a color of rom about 2.5 Y 9/4 to about 2.5 Y 9/6 in the *Munsell Book of Color* when viewed in natural light.

11. Propagation material of the *Phaseolus vulgaris* of claim **8**.

12. Pollen of the *Phaseolus vulgaris* of claim **8**.

13. Seed from a field bean variety of *Phaseolus vulgaris* that is completely yellow in color, wherein the yellow color is from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color*.

14. Seed of claim **13** further comprising a hilar ring.

15. Seed of claim **14** wherein the color of the hilar ring is from about 2.5 Y 9/4 to about 2.5 Y 9/6 in the *Munsell Book of Color* when viewed in natural light.

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FIELD BEAN CULTIVAR NAMED ENOLA

FIELD OF THE INVENTION

This invention relates to a new field bean variety that produces distinctly yellow colored seed which remain relatively unchanged by season.

BACKGROUND OF THE INVENTION

Dry edible field beans (*Phaseolus vulgaris*) such as pintos, great northerns, navies, kidneys, blacks, pinks, etc., contain no cholesterol and very little fat. In combination with other foods, they serve as a complete source of protein. In fact, one cup of cooked dry field beans contains approximately 35% of the U.S. recommended daily allowance of protein.

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As demonstrated above, field beans are an important and valuable field crop. Thus, a continuing goal of plant breeders is to discover and develop stable, high yielding bean cultivars that are agronomically sound. To accomplish this goal, the bean breeder must discover, select and develop bean plants that have the traits that result in superior cultivars.

SUMMARY OF THE INVENTION

The present invention involves a field bean cultivar named "Enola". The field bean cultivar Enola produces a distinct and completely yellow colored seed. The yellow color of the seed remains uniform and stable from season to season. The present invention also relates to a method for producing a field bean plant by crossing a first parent field bean plant with a second parent field bean plant, wherein the first and/or second field bean plant is the field bean plant of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The file of this patent contains at least one color photograph. Copies of this patent with the color photographs will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.

FIG. 1 shows a color photograph of several yellow colored bean seeds of the field bean cultivar Enola.

FIG. 2 shows a color photograph of a close-up of the seed of the variety Enola. The seed of Enola has a yellow color (matching most closely 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the

Munsell Book of Color when viewed in natural light) throughout its seed coat and a tan/yellow (matching most closely 2.5 Y 9/4 to 2.5 Y 9/6 in the *Munsell Book of Color* when viewed in natural light) hilar ring.

FIG. 3 shows a color photograph of the dry field bean cultivar Enola, including its stem, branches, leaves, pods and root structure.

DEFINITIONS

In the description and tables which follow, a number of terms are used. In order to provide a clear and consistent understanding of the specification and claims, including the scope to be given such terms, the following definitions are provided:

Maturity. Plants are considered mature when 95% of the pods have received their mature color.

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The value (V) notation indicates the lightness or darkness of a color in relation to a neutral gray scale, which extends from absolute black to absolute white. The value symbol 0 is used for absolute black, the symbol 10 is used for absolute white. The symbol 5 is used for the middle gray and for all chromatic colors that appear half way in value between absolute black and absolute white.

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The complete Munsell notation for a chromatic color is written H V/C. For example, seed having the Munsell color 7.5 Y 8.5/6. The 7.5 Y represents the hue, 8.5 represents the value, and 6 is the chroma.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a field bean (*Phaseolus vulgaris*) cultivar that produces seed having a distinctive yellow color. The yellow color is present throughout the entire seed coat and remains uniform and stable season after season, when viewed in natural lighting.

In 1994, field beans that were yellow in color were discovered in a package of dry edible beans purchased in Mexico and brought to the United States. This package of beans contained a variety of different types of beans including browns, blacks, pintos, etc. Later in 1994, the yellow

field beans selected from the package of miscellaneous beans were planted in Montrose County, Colorado and allowed to self-pollinate. A segregating population of plants resulted. Many of the resulting plants exhibited abnormally large leaves, approximately twice the size of the leaves of the cultivar of the present invention, and produced pods containing yellow seeds. Additionally, a large number of the plants also produced pods that did not adhere well to the branches of the plant and fell to the ground and other pods exhibited shattering prior to harvest. Individual plants exhibiting small leaves, good adherence of the pod to the branches of the plant, as well as resistance to pod shattering, were selected and harvested individually.

The harvested seeds were planted in 1995 in Montrose County, Colorado and allowed to self-pollinate. Most of the resulting plants exhibited uniform leaf size. Individual plants exhibiting good adherence of the pod to the branches of the plant, resistance to pod shattering and yields greater than the average yield of an average commercial bean plant (the average commercial pinto bean plant yields approximately 3.1 pinto beans per pod) were selected and harvested individually.

These harvested seeds were planted in 1996 in Montrose County, Colorado and allowed to self-pollinate. The resulting plants exhibited uniform leaf size. Individual plants exhibiting the good adherence of the pod to the plant, higher yield, and resistance to pod shattering were selected and harvested and bulked to produce the cultivar of the present invention.

The field bean cultivar Enola exhibits superior characteristics over other classes of field bean cultivars. More specifically, Enola seed possesses a unique yellow color, matching most closely to 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color*, when viewed in natural light. Unlike the seed produced by the "Yellow Eye" class of dry field beans, such as the cultivar Steuben, in which the yellow color is restricted only to the "eye" of the seed, the yellow color of the Enola seed is present throughout the entire seed coat. The hilar ring of Enola is tan/yellow in color, matching most closely 2.5 Y 9/4 to 2.5 Y 9/6 in the *Munsell Book of Color*, when viewed in natural light. FIG. 1 is a color photograph of the yellow bean seeds of Enola. This photograph demonstrates that the entire seed coat of the bean is yellow in color. FIG. 2 is a close-up color photograph of the yellow seed of Enola. This photograph demonstrates that the entire seed coat of Enola seed, including the hilar ring, is yellow in color. The yellow color of the Enola seed remains relatively unchanged by season. "Relatively unchanged by season" means that the color of the seed remains uniform and stable from season to season.

FIG. 3 shows a color photograph of the field bean cultivar Enola. The photograph shows the wood-like stalk of the cultivar and its wrinkled and dull ovate shaped leaves. The photograph also demonstrates the long, branching root structure of the plant, which is unusual for a field bean cultivar. The root structure of most field bean cultivars (such as pintos) would be described as follows. Beginning at, or just below the soil line, the root averages 0.5 cm±in caliper size and branches into a mass of roots consisting of a main taproot, leader or stabilizing roots, and feeder roots, all of soft plant tissue extending up into the stem and branches of the plant. The main taproot is generally of the same size or slightly larger than the leader and feeder roots. Since the root system is not heavy in mass and does not extend very deep into the soil, these beans are "pulled" at harvest time. The yellow "Enola" variety establishes a long deep-growing taproot averaging 1.0 cm±in caliper size, a leader root of

slightly lesser size, and even smaller feeder roots, all of the same wood-like tissue that extends upward into the stem. Due to the size and wood-like tissue structure, the Enola bean must be cut or "knifed" at harvest time.

The pods produced by the cultivar Enola adhere strongly to the branches of the plant. There is minimal dropping of the pods from the branches, under normal or adverse climatic conditions which is a significant problem in other field bean varieties. Additionally, the pods of Enola exhibit good tightness, which is helpful in keeping out moisture, which lessens seed damage, thereby improving the quality of the seed. Seed damage due to moisture has been a problem in other field bean varieties. Typically, once moisture gets into the pods of a bean plant, the pods swell, then shrink, and then eventually open, releasing their seeds into the growing area. Finally, the pods of Enola exhibit very little shattering prior to harvest.

The distinctly yellow colored bean seeds of Enola are edible for human consumption. Unlike other dry field beans which have a gritty type of texture and taste, the bean seeds of Enola have a smooth texture and taste. Additionally, the bean seeds of Enola have the ability to take on a large volume of water when soaked prior to cooking. Furthermore, the bean seeds of Enola have been found to cook up faster, in approximately one-half the time, of other dry field beans. For example, two pots containing the yellow bean seeds of the present invention can be cooked in the same amount of time that it takes to cook just one pot of pinto bean seeds.

The cultivar has shown uniformity and stability for all traits, as described in the Example 1, which contains a description of variety information. The cultivar has been self-pollinated a sufficient number of generations, with careful attention to uniformity of plant type to ensure phenotypic stability. The cultivar has been increased with continued observation for uniformity. No variant traits have been observed or are expected in Enola.

This invention is also directed to methods for producing a field bean plant by crossing a first parent field bean plant with a second parent field bean plant, wherein the first or second field bean plant is the field bean plant Enola. Further, both first and second parent field bean plants may be from the cultivar Enola. Therefore, any method using the cultivar Enola is part of this invention: selfing, backcrosses, hybrid breeding, and crosses to populations.

As used herein, the term "plant" includes plant cells, plant protoplasts, plant cells of tissue culture from which field bean plants can be regenerated, plant calli, plant clumps, and plant cells that are intact in plants or parts of plants, such as pollen, flowers, seeds, pods, leaves, stems, and the like. Thus, another aspect of this invention is to provide for cells which upon growth and differentiation produce the cultivar Enola.

By way of example, not of limitation, the following examples are given.

EXAMPLE 1

Morphological Description of Enola

The field bean cultivar Enola will not be described. The terminology used herein to describe Enola are those used by the Plant Variety Protection Office, unless otherwise noted, in Exhibit C, "Objective Description of the Variety Edible Bean (*Phaseolus vulgaris* L.).

1. PLANT VARIETY. Enola is a dry field bean variety. Genus and Species Name: *Phaseolis vulgaris*. Family name: Leguminosae.

2. PLANT HABIT. Enola is in the form of bush—determinate, with a strong and erect stem and branches. The average height of the mature plant is 34.9 cm. The position of the pod on the plant is scattered. The variety exhibits good lodging resistance through maturity, and does not fall over easily when subjected to wind and other climatic conditions. The variety is not adapted for machine harvesting.

3. LEAF MORPHOLOGY. The mature leaves are wrinkled and dull and the overall shape of the leaves is ovate. The apex of the leaves are acuminate and the base is obtuse.

4. FLOWER COLOR. The color of the flowers, wings and keel is white.

5. POD MORPHOLOGY.

ONSET—At onset, the color of the pod is green (matching most closely 5 GY 6/6 in the *Munsell Book of Color* when viewed in natural light) and the color pattern of the pod is solid. The pod exhibits a pear shape cross section. The curvature of the pod is straight and the orientation of the pod beak is also straight. The pod exhibits slight constrictions.

MATURITY—At maturity, the color of the pod is tan (matching most closely 5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light) and the color pattern of the pod is solid. The pod exhibits a pear shape cross section. The curvature of the pod is slightly curved and the orientation of the pod break is variable. The average break length of the pod is 1.2 cm. The pod also exhibits slight constrictions. The number of seeds per pod is approximately 3.1.

6. SEED COLOR. The seeds are shiny and monochrome. The primary color of the seeds is yellow (matching most closely 7.5 Y 8.5/4 to 7.5 Y 8.5/6 in the *Munsell Book of Color* when viewed in natural light). The seeds do not have a secondary color. The color of the hilar ring is tan/yellow (matching most closely 2.5 Y 9/4 to 2.5 Y 9/6 in the *Munsell Book of Color* when viewed in natural light). Light is not required for the germination of the seeds.

7. SEED SHAPE AND WEIGHT. The shape of the seed taken from the middle of the pod is cuboid. The dry seed weight of 43 grams per 100 seeds (adjusted to 12 percent moisture).

8. ANTHOCYANIN PIGMENTATION. Anthocyanin pigmentation is absent in the flowers, stems, pods, seeds, leaves, petioles, peduncles and nodes.

9. DISEASE AND STRESS REACTIONS. Enola is tolerant to heat. Enola exhibits some resistance to Fusarium root rot.

10. MISCELLANEOUS INFORMATION. The estimated maturity is late (101 days).

EXAMPLE 2

Propagation of Enola

Production of market ready beans from Enola proceeds as follows. Seed is directly sown one at a time in rows in a bed. The rows on a bed are about 30 inches apart with seed deposited at intervals of approximately 1½ to 1¾ inches along the row.

In Montrose County, Colorado, the plants are watered during the germination phase using a gravity flow system. As the plants grow, they require water approximately every 7 to 10 days.

In mineral soils common in the west, fertilization with nitrogen, phosphorus and, less frequently, potassium is required.